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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No.	EV069127765US

INVENTOR(S)		
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☐ *Additional inventors are being named on the _____ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (500 characters max)

SELLING IN BULK ON EBAY

CORRESPONDENCE ADDRESS

Direct all correspondence to:

☑ Customer Number 000025943 → *Type Customer Number here*

Place Customer Number Bar Code Label here

OR

☐ Firm or Individual Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	

ENCLOSED APPLICATION PARTS *(check all that apply)*

☑ Specification *Number of Pages* 14

☑ Drawing(s) *Number of Sheets* 2

☐ Application Data Sheet. See 37 CFR 1.76

☐ CD(s), Number

☑ Other (specify) Return Receipt Postcard

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT

☑ Applicant claims small entity status. See 37 CFR 1.27.

☑ A check or money order is enclosed to cover the filing fees

☑ The Commissioner is hereby authorized to ~~charge filing fees or~~ credit any overpayment to Deposit Account Number: 500393

☐ Payment by credit card. Form PTO-2038 is attached.

FILING FEE AMOUNT ($): $80.00

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☑ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE _____

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Date 06/20/2003

REGISTRATION NO. *(if appropriate)* 35,432

Docket Number: 109876-133755

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
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PROVISIONAL APPLICATION FOR UNITED STATES PATENT

FOR

SELLING IN BULK ON EBAY

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SELLING IN BULK ON EBAY

FIELD OF THE INVENTION

The present invention relates to the field of electronic commerce (e-commerce). More specifically, the present invention is related to an automated method and related apparatuses for retailing on eBay.

BACKGROUND OF THE INVENTION

EBay today is the global marketplace: approximately $20 Billion in gross merchandise sales will be transacted on eBay this year. Thus far, much of the merchandise transacted on eBay has been unique (non-commodity) products: collectibles, used, refurbished, and flawed. eBay's marketplace model -- infrastructure, pricing, and UI -- is built with the assumption that every product is unique, and so deserves its own listing. Further, in keeping with this model, every listing on eBay has a pre-defined, short, lifetime (usually in the order of weeks) determined by the seller – typically the amount of time it will take for the product to sell. Many of the sellers on eBay are mom-and-pop shops that focus on sourcing unique products.

EBay has achieved such incredible size in its 7 years of existence, that it is now a legitimate channel for any retailer. Most real-world retailers sell "non-unique" products, and their key focus is merchandising and inventory management, not just sourcing. A key characteristic of a non-unique product is that there are many identical items corresponding to the same SKU. For example, a book retailer, Books-r-us may have 100 copies of the book "Atonement" (the SKU.) Contrast this with a mom-and-pop shop that has 3 used copies of Atonement. Each of these copies potentially has different wear-and-

tear characteristics and so is unique – one may be brand new and one may have dog-ears.

The fundamental challenge for a retailer (who wants to sell on eBay) is the impedance mismatch between the retail model (bulk selling) and the eBay marketplace model (one-at-a-time selling). The marketplace model is driven to maximize margin on a single product, while the retail model would much rather have more turns (number of products sold) at a fixed margin. As more and more new items are sold on eBay, implementing the retail model in eBay is crucial, and is one of the biggest issues preventing retailers from using the eBay channel.

Here is an example that illustrates the impedance mismatch between retail and marketplace: let's say the retailer, Books-r-us wants to sell its 100 copies of "Atonement" on eBay at a fixed price. There are the following options that are available to Books-r-us:

1. List each of these copies separately in identical listings. So for example, Books-r-us would have 100 unique listings of Atonement which each expired in 1 week and had the same reserve price (set to the fixed price). The challenge with this approach: there is a high likelihood that there is demand for only 30 copies of Atonement in a week at that price. So 70 of the listings don't close. The cost for these unclosed listings is very high: for example, for reserve-price items, eBay charges 1.25% to 10% (or more depending on the price – see table)of the reserve price as a listing fee. A seller on eBay who overestimates demand pays an especially huge penalty as compared to a real-world retailer. A real-world retailer's cost of overestimating demand is inventory cost -- the cost of tying up capital for the time it takes to sell the item – the interest paid on this capital. The eBay sellers' dominant cost is listing fees not inventory costs. In effect, each time a seller lists on eBay, they are borrowing space (not money) from eBay. The interest rate eBay charges for this space is the listing fee:

1.25%-10% of the reserve price for the duration of the listing. Since most listings are relatively short-lived in the order of weeks, the effective interest rate eBay charges is almost usurious and would make credit-card companies blush! For a 2-week listing at a listing fee of 3%, the annual rate effectively works out to 75%!!! Continuing our running example, we illustrate this situation: Let's assume it takes Books-r-us 1 more week to sell the 70 unsold items. Further, assume Books-r-us' cost for "Atonement" is $10 and the reserve price is $12.5 (and there is no further bidding, and the sale price is the reserve price), and the annual interest rate is 5%. The inventory cost of overestimating demand in this case: 10*70*5/(52*100) = $0.67. The listing cost, on the other hand, of overestimating demand in the first week is 12.5*70*1.25% = $11. Listing costs are more than 15 times the inventory cost!

Starting Price, Opening Value or Reserve Price	**Insertion Fee + Reserve Price Auction Fee %age**
$0.01 - $9.99	$0.80 (8000% - 8%)
$10.00 - $24.99	$1.05 (10.5% - 4.2%)
$25.00 - $49.99	$2.10 (8.4% - 4.2%)
$50.00 - $199.99	$3.20 (6.4% - 1.6%)
$200.00 - $999.99	$3.30 + 1%

(2.65% - 1.33%)

$1,250
$3.30 + 1%

1.26%

2. The other option for Books-r-us is to list one item at a time. Here the challenge is the retailer underestimates demand. Let's say the actual demand was for 30 books, and there was only one listing. 30 people bid on the same listing driving its price up. So the retailer has high margins on one copy but has potentially lost sales on many others. It also keeps the retailer from being able to sell large volumes, a fatal flaw for any mass-market retailer. Most small sellers on eBay sacrifice volume for margin, and this approach makes sense for unique products. This approach does not work for a retailer who wants to sell many identical products at the same price.

Additionally, demand for a given product at a given price point in eBay is not static, but rather varies based on a number of eBay-specific factors like time to expiration of a listing, position of the listing (is it featured?), etc...

So it is crucial for any power seller in eBay to both maximize demand as well as match supply with demand.

Today, matching of demand and supply is done very poorly on eBay. In certain categories, close rates are less than 2%. In other words, out of every 50 items a seller lists, only 1 sells. At a listing fee of 1.25%/item, that's an additional 60% of overhead due to unsold items that is tacked on to the cost of each sold

item. No wonder most sellers on eBay complain about making sales but no profits on eBay!

EBay does provide a cheap single long-life listing which can represent multiple items. Unfortunately, this feature (called Multiple Item Buy-it-Now) has been very ineffective. There are many reasons, perhaps the most important is that it goes against the eBay model, which is one listing per item, so this single listing which may represents hundreds and thousands of items shows up only once in search most likely at the bottom of the search due to the expiration being furthest away.

Thus, any bulk-selling method on eBay is likely going to have to be built on top of multiple single listings. Not doing so will not fit the eBay infrastructure and most importantly will run counter to eBay's business model and so will be doomed to failure. Though eBay has never revealed the breakup of their revenues: listing vs transactional fees, it is believed that the listings fees dominate transaction fees.

A seller has a number of options to more prominently display listings to increase demand. There are numerous options available to feature listings. For example, listings can be featured on the home page for $100 or on category pages and searches for $20.

Thus, it is describable to come up with a mechanism by which a retailer can simultaneously maximize demand and match supply with demand efficiently. These goals are opposed to one another on eBay today. For example, if you wanted to maximize demand for your product on eBay today, you'd most likely feature the product on the home page. By doing so, you would drive up the sale price well in excess of the reserve price and thus rather than selling more products you'd sell one product at a high margin.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates a network/environment view of the present invention, in accordance with one embodiment.

Figure 2 illustrates an architectural view of one of the clients of **Fig. 1**, in accordance with one embodiment.

DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

The present invention includes two novel listing techniques on eBay: Demand Listings and Linked Listings, which enable a retailer, especially a non-unique good retailer, to match supply and demand, as well as strife for maximizing demands.

The present invention also includes a method for using these techniques, and a number of other related techniques.

The present invention may be practiced in an automated manner, through the employment of one or more automatic data processing apparatuses, and the present invention includes these ASICs, components, boards, apparatuses, systems, endowed with all or portions of the teachings of the present invention.

Figure 1 illustrates a system/network view of the present invention, in accordance with one embodiment. As illustrated, clients **102a** and **102b** are coupled to eBay's servers **120** via network **112**. Clients **102a** and **102b** are both provided with eBay retailing logic **104a** and **104b** of the present invention. As a result, users of clients **102-102b** may retail on eBay more successfully and at lower cost, especially for non-unique goods.

Except for retailing logic **104a** and **104b** provided to clients **102a** and **102b**, the various enumerated elements represent a broad range of these elements known in the art or to be designed.

While for ease of understanding, only a couple of clients equipped with the teachings of the present invention are illustrated. The present invention is not so limited, and may be practiced with many clients. Further, a portion of the retail logic may be practiced on one or more servers (not shown) supporting the clients.

Figure 2 illustrates an architectural view of client **102a/102b** in accordance with one embodiment. As illustrated, for the embodiment, client **102a/102b** includes microprocessor/controller **202**, display **204**, memory **206**, GPIO **208**, network interface **212**, coupled to each other via bus **214**, as shown.

Memory **206** includes retail logic **240** of the present invention, and operating system services **242**. Memory **206** may also be used to store the various operational data.

Retail logic **240** may be implemented in any one of a number of programming languages known or to be designed. Typically, they are languages that may be compiled into instructions supported by the processor(s) of the host computing device.

In various embodiments, clients **102a-102b** may be a desktop computer, a notebook computer, a tablet computing device, a palm sized personal digital assistant, a wireless mobile phone, or other computing devices of the like.

In alternate embodiments, all or portion of retail logic **240** may be implemented in Application Specific Integrated Circuits (ASIC), embedded in electronic components and/or circuit boards.

As alluded to earlier, retail logic **240** includes logic to practice a number of novel listing and related techniques, individually or in combination. The listing techniques include a Demand Listing and a Linked Listing technique.

Matching Supply and Demand Efficiently: Demand Listings

The goal of matching supply and demand can be broken down to two simple but powerful sub-goals:

- Don't create a new listing till there is guaranteed demand (ensures we don't overestimate demand)

- Don't sell any product above the reserve price (ensures we don't underestimate demand). It sounds counter-intuitive but it works!

Demand Listings is a technique by which listings are inserted/changed into eBay based on certain demand events. Examples of demand events: a listing expires, the reserve price on a certain listing is met, the number of bids for a given listings exceeds a certain number, the average number of bids on all the listings corresponding to a product exceeds a certain number, etc... Demand actions could be inserting a new listing, making a listing featured, closing an auction, etc...

A simple Demand Listings strategy satisfies the first sub-goal above, with the demand event triggering the insertion of a new listing being: the retailer's reserve price has been met. To satisfy sub-goal 2 above, we also need to ensure the auction is closed when the reserve price is exceeded.

Putting these two conditions together, we get the following scheme: as soon as the reserve price is met, award the sale and close the auction (we can achieve this using the buy-it-now feature on eBay.) Simultaneously insert a new listing.

Maximizing Demand: Linked Listings

When we desire to maximize demand coincident with matching supply and demand, the scheme given above is very poor. To see this, let's assume we decide to feature our listing on the home page paying eBay $100 per listing and using the buy-it-now feature. We add an additional $100 per listing to our cost structure to maximize demand. This increase may simply be untenable for most retailers on eBay.

Linked Listings is a mechanism by which a given listing in eBay links to other listings inside eBay. In particular, listings link to other identical product listings by the same seller inside eBay.

Using Linked Listings and Demand Listings we can maximize demand coincident with matching supply and demand.

Retail Method Using Demand and Linked Listing

1. Start with one featured listing with reserve price set as the targeted sale price.
2. Demand List a new listing (it does not have to be featured) the instant the reserve price is met.
3. Link List the new listing to the original listing. We advertise on the original listing that the reserve price is met and that we now have a new identical listing with no bids, with a shortly due expiry.
4. Repeat 2 and 3 so that at any time, there is exactly one new "open" listing, and all the other listings (reserve price has been met) link to the open listing. Demand event triggering insertion of a new "open" listing can be recursively defined as: reserve price on the open listing has been met.
5. When the featured listing expires, the current open listing is moved to being featured (another example of a Demand Listing.)

The key notion introduced in this method is the existence of two classes of listings with different characteristics: featured and regular. Featured listings drive traffic and so we may want to keep them long-lived. Regular listings are short-lived and may even be buy-it-now listings.

Given that featured listings are long-lived, and that most bids on eBay happen towards the end of the auction, it may take a long time for the reserve price on the featured listing to be met. If needed, the algorithm above can be modified slightly to account for this issue as follows: for the featured listing only, we Demand List a new, short-lived regular listing coincident with creation of the featured listing. In other words, the initial Demand Event triggering insertion of a new open listing is the creation of a featured listing rather than the reserve price on this featured listing being exceeded as in the algorithm above.

In summary, we have provided a method that enables a retail model (bulk selling) to be overlaid on eBay's marketplace model (one-at-a-time selling). Thus, real world retailers who have stayed away from eBay for this very reason have a mechanism to now sell to the massive eBay audience.

Accelerating the flow of the Linked Listing Chain: Featuring

Another aspect of a listing on eBay is the amount of user traffic it generates. With over 12 million listings worldwide at any given time, the mere act of listing a product on eBay does not ensure that every buyer who is in looking for the product will get to see it. EBay offers sellers several ways to feature their listings and increasing exposure to buyers.

However, since each feature type has additional listing fees associated, it needs to be used judiciously when the number of buyers that view a listing isn't sufficient to capture the demand that exists in the marketplace. The time duration between listings in the linked listing chain is an excellent indicator of demand for the product on eBay and can be used as a lead indicator of when a new listing should be featured.

"Featuring" Method:

1. Each day (weekday or weekend) is divided into n time slots (e.g. 4):

   Slot 1: 12 am – 6am:

   Slot 2: 6am – 12 pm

   Slot 3: 12 pm – 6pm

   Slot 4: 6pm – 12 am

2. When listings for a product reach steady state, the listing duration (that is, the time taken for the listing to reach reserve bidding price) is recorded along with the time slot. Thus, each time slot has an optimal listing duration, which is the average duration of all listings which closed during that time period;

3. After listings for a product have reached steady state, the duration of each listing is carefully monitored. When a listing exceeds the optimal listing duration, it signals that the next listing needs to be featured. The increase in the duration relative to the optimal listing duration for the time slot is used to determine the type of feature that should be used for the next listing. The additional fees charged by eBay for the feature type is used as a proxy to determine resultant increase in traffic.

Feature Type	Additional Fee	Percentage Increase
Gallery	$0.25	5%
Bold	$1.00	5% - 15%
Highlight	$5.00	15% - 100%
Gallery Featured or Featured Plus	$19.95	100% - 200%

Home Page Featured	$99.95	200% or more

4. Featuring for new listings continue till the listing duration falls below the optimal listing duration.

5

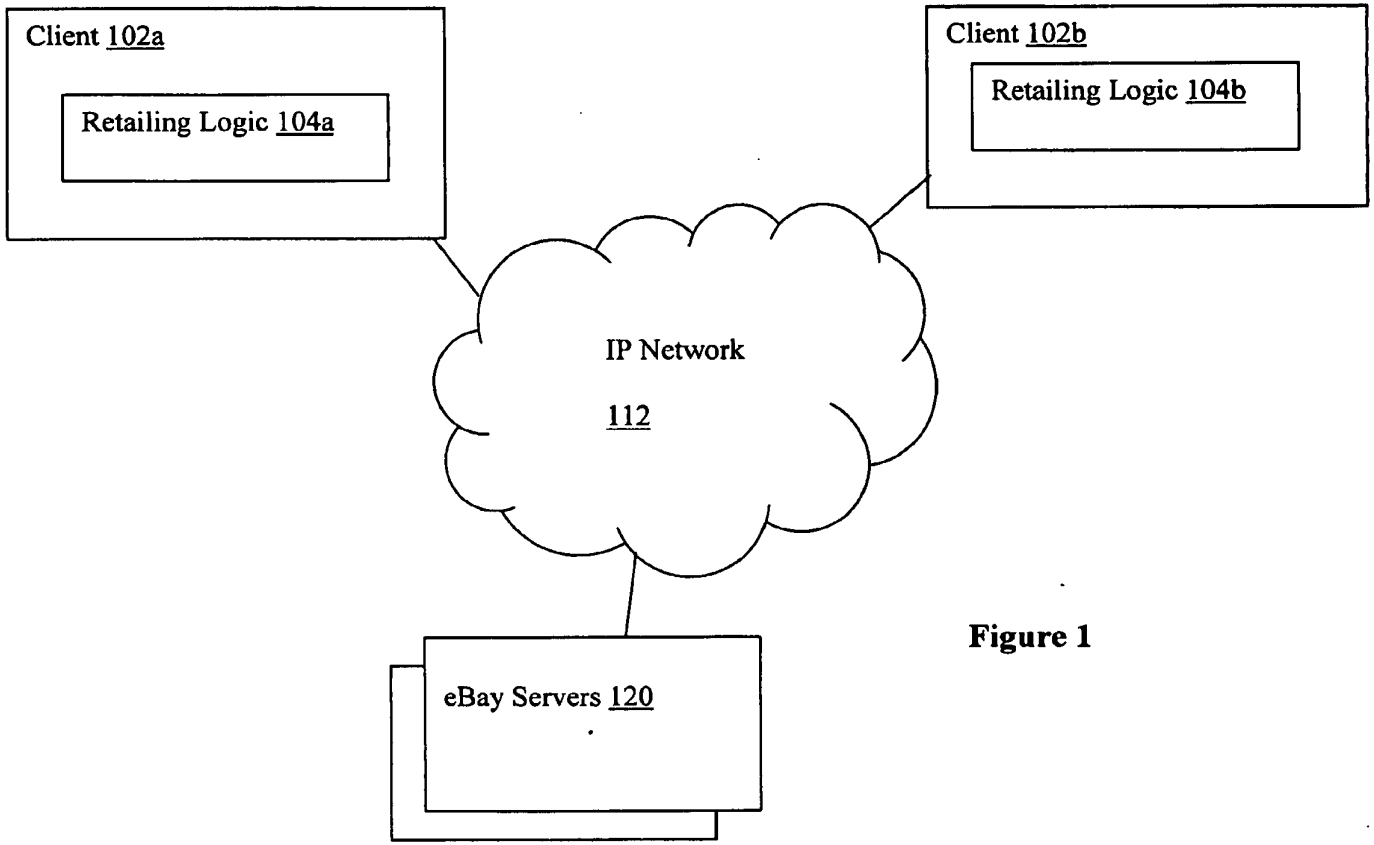
Client 102a
Retailing Logic 104a
Client 102b
Retailing Logic 104b
IP Network
112
eBay Servers 120

Figure 1

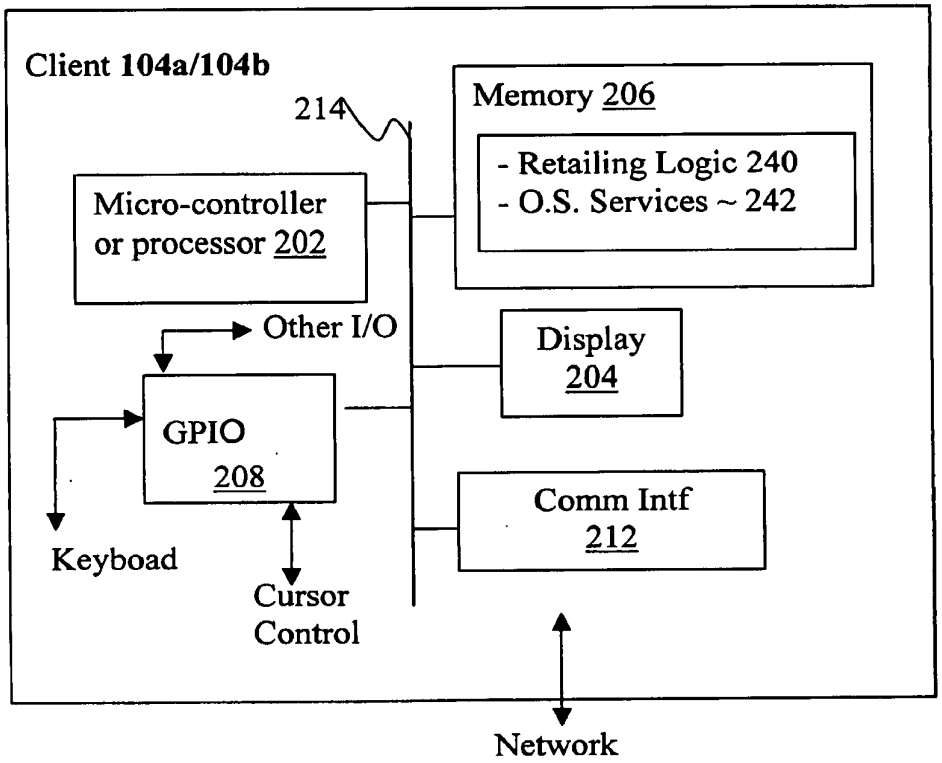
Client 104a/104b
214
Memory 206
- Retailing Logic 240
- O.S. Services ~ 242
Micro-controller or processor 202
Other I/O
Display 204
GPIO 208
Comm Intf 212
Keyboad
Cursor Control
Network

Figure 2